CLAIMS

What is claimed is:

1. A biosensor with multi-channel A/D conversion, comprising:

a chip generating a time-dependent analog signal in response to a content of a specific component of a specimen provided on said chip;

a multi-channel A/D converter with multiple channels each of which simultaneously receiving the time-dependent analog signal in each sampling interval in order that said multi-channel A/D converter converts the time-dependent analog signal to a set of digital signals; and

a microprocessor receiving the sets of digital signals in a period of sampling time and determining the content of the specific component based on the sets of digital signals.

2. The biosensor of claim1, wherein the time-dependent analog signal is in a form of response current.

3. The biosensor of claim 2, further comprising a current/voltage converter to convert the time-dependent analog signal to a time dependent output voltage prior to sending to said multi-channel A/D converter.

4. The biosensor of claim 3, wherein said current/voltage converter includes an operational converter.

5. The biosensor of claim 1, wherein said multi-channel A/D converter includes a sampler, a multi-channel converter and a logic

circuit.

6. The biosensor of claim 3, wherein said multi-channel A/D converter includes a sampler, a multi-channel converter and a logic circuit.

7. The biosensor of claim 4, wherein said multi-channel A/D converter includes a sampler, a multi-channel converter and a logic circuit.

8. The biosensor of claim 1, wherein said microprocessor includes a mapping table of peak value versus content of the specific component, the peak value representing a maximum value of a time-dependent discharge curve constituted by the sets of digital signals collected during the period of sampling time, and said microprocessor determines the content of the specific component in accordance with the mapping table.

9. The biosensor of claim 3, wherein said microprocessor includes a mapping table of peak value versus content of the specific component, the peak value representing a maximum value of a time-dependent discharge curve constituted by the sets of digital signals collected during the period of sampling time, and said microprocessor determines the content of the specific component in accordance with the mapping table.

10. The biosensor of claim 1, wherein said microprocessor includes a mapping table of rising time versus content of the specific component, the rising time corresponding to a maximum value of a time-dependent discharge curve constituted by the sets of digital signals collected during the period of sampling time, and said microprocessor determines the content of the specific component in accordance with the mapping table.

11. The biosensor of claim 3, wherein said microprocessor includes a mapping table of rising time versus content of the specific component, the rising time corresponding to a maximum value of a time-dependent discharge curve constituted by the sets of digital signals collected during the period of sampling time, and said microprocessor determines the content of the specific component in accordance with the mapping table.

12. The biosensor of claim 1, wherein further comprising a liquid crystal display for displaying a reading of the content of the specific component.

13. The biosensor of claim 3, wherein further comprising a liquid crystal display for displaying a reading of the content of the specific component.

14. A method for determining a content of a specific component of a specimen, comprising:

providing a specimen on a chip of a biosensor to generate a time-dependent analog signal in response to a content of a specific

component of the specimen;

simultaneously sending the time-dependent analog signal to each channel of a multi-channel A/D converter for converting to a set of digital signals during each sampling time;

sending the set of digital signals to a micrprcessor; and

determining the content of the specific component in accordance with the sets of digital signals collected during a period of sampling time.

15. The method of claim 14, wherein the time-dependent analog signal is in a form of response current.

16. The method of claim 15, further comprising a step of converting the time-dependent analog signal to a time-dependent output voltage prior to converting to the set of digital signals.

17. The method of claim 14, wherein further comprising a step of establishing a time-dependent discharge curve in accordance with the sets of digital signals collected during the period of sampling time.

18. The method of claim 17, wherein the content of the specific component is determined in accordance with the time-dependent discharge curve and a mapping table of peak value versus content of the specific component, the peak value representing a maximum value of the time-dependent discharge curve.

19. The method of claim 17, wherein the content of the specific component is determined in accordance with the time-dependent discharge curve and a mapping table of rising time versus content of the

specific component, the rising time corresponding to a maximum value of the time-dependent discharge curve.

20. The method of claim 16, wherein further comprising a step of establishing a voltage-time discharge curve in accordance with the sets of digital signals collected during the period of sampling time.